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THE UNIVERSITY OF ALBERTA

COMPARISON OF SUICIDAL AND NON SUICIDAL PRISON INMATES

BY

ANDREA D. REES

(C)

A THESIS

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled COMPARISON OF SUICIDAL AND NON SUICIDAL PRISON INMATES submitted by Andrea D. Rees in partial fulfillment of the requirements for the degree of Master of Education in Counselling Psychology.

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ABSTRACT

This study was carried out with a view to identifying factors which may differentiate suicidal and non-suicidal individuals in a medium security correctional facility. Variables of interest ranged from personality constructs to personal and social backgrounds.

20 suicidal and 20 non-suicidal inmates were asked to complete the Basic Personality Inventory (BPI) and the Reddon-Jackson Social History (SOC). Group differences were found on the BPI with respect to overall personality profiles with significantly higher scores for the suicidal group on the Hypochondriasis and Deviation scales; there was evidence of depressive symptoms such as impaired memory, depressed mood and trouble sleeping for the suicidal group. Assessment of the construct, hopelessness, also showed differences between suicidal and non-suicidal groups in that only suicidal respondents scored above a cutoff point of nine. When hopelessness ratings were correlated with BPI scales, the correlations with Interpersonal Problems and with Depression were significantly higher for the suicidal group.

With respect to information yielded in the SOC it was found that inmates in both groups were generally similar in terms of dysfunctional family background, but higher proportions of suicidal inmates had family members with a history of emotional problems or suicide attempts, extensive alcohol abuse and longer criminal histories. Suicidal inmates were more likely to have had previous psychiatric contact and showed more tendencies towards self-mutilation than their non-suicidal counterparts. For those who had attempted suicide, either drugs or alcohol was found to be a common precursor.

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It should be recognized that the views expressed in this research are those of the author and are not necessarily shared by the Department of the Alberta Solictor General.

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CHAPTER I

Introduction

Suicide and attempted suicide is a problem which touches many groups, from elementary school children to the elderly. The cost of suicidal behavior is high, both in terms of medical expense and emotional distress for unsuccessful attempters and those who are left behind in the case of a completed suicide. The study of suicide has proven to be elusive, for as Balon (1987) noted, the nature of suicide is one of the end results of a process which has multiple determinants.

A particularly high risk population which has been identified is that in prisons and jails. Backett (1987) studied deaths in Scottish prisons from 1970 to 1982 and found suicide to be the single largest cause of death. In Canada, Ramsay, Tanney and Searle (1987) cited an average rate of completed suicide in prison of 125 per 100,000 for the period from 1971 to 1984, a rate more than eight times that of the general population. Even when prison inmates were matched by the mean age, 23 years, and predominant sex, 97% male, with the general population the researchers found inmates completed suicide 3.5 times more often. Similarly, the National Task Force on Suicide in Canada (1987) estimated the overall rate of suicide in federal institutions to be three times the rate in the general population.

Statistics from the Alberta Solicitor General show that in Alberta Correctional Centers, over the 18 month period from April 1, 1986 to October 31, 1987 there were a total of 100 suicides and attempted suicides carried out by 80 individuals. Offenders in adult correctional centers accounted for 68% of these incidents, 30% occurred in youth centers and

the remaining 2% in young offender group homes. The number of actual suicides in this period was not indicated.

It is somewhat surprising to learn that such high rates of suicide exist in settings where supervision is constant and many of the usual methods of committing suicide, such as shooting, jumping off buildings or crashing a vehicle are inaccessible. Given the extent of the problem and the finality of the suicide "alternative", it seems logical to try and develop a means of early identification of potentially suicidal individuals so that steps may be taken to preclude suicidal behavior. The general purpose of the current study is to compare suicidal and non-suicidal inmates at Fort Saskatchewan Correctional Center, a medium security facility in Alberta, with a view to identifying factors which may differentiate suicidal from non-suicidal inmates. More specifically the following questions are addressed:

1. Do personality profiles obtained by administering the Basic Personality Inventory (BPI) differ for suicidal and non-suicidal inmates?

2. Are there particular scales on the BPI which are useful in differentiating the groups?

3. Are there specific critical items which tend to be answered more frequently by suicidal individuals?

4. Is there a difference in the mean level of response for suicidal and non-suicidal individuals on the Beck Hopelessness Scale?

5. Do suicidal and non-suicidal individuals differ on personal and social factors such as psychiatric history, offence history, family history, alcohol and drug use, and self-harm tendencies as indicated in the Reddon-Jackson Social History Program?

These questions can be seen to have relevance in both clinical and research spheres. In their paper on predicting suicide risk, and as a rationale for developing a special scale for suicidal ideation, Beck, Kovacs and Weissman (1979) cited evidence of the inefficacy of generalized personality tests in assessing the probability of a suicide attempt. The current research provides an opportunity to further explore this assertion using a relatively new instrument, the Basic Personality Inventory. Further, it examines individual critical test items. For example, BPI statements such as "My present situation is hopeless", "I don't think my life is worth living", "I don't think things will ever get any better for me" and "Recent events have made me feel downhearted and miserable" reflect themes of hopelessness, despair and negative feelings about the future which researchers (Hopes and Shaull, 1986; Jones, 1986) have discovered in exploring the feelings of inmates who have attempted but survived suicide.

This study adds to previous research in which the Hopelessness Scale (Beck, Weissman, Lester and Trexler, 1974) was used in exploring suicide. Some writers (Kovacs, Beck and Weissman,1975; Beck, Steer, Kovacs and Garrison,1985) suggested that hopelessness is a better indicator of suicide risk and severity of intent than depression. The current research examines both of these elements, by using the Hopelessness Scale and the BPI's Depression subscale.

Another instrument used in this study, the Reddon-Jackson Social History program (SOC) is a newly developed instrument. It is a self-report inventory designed to gather information relating to an individual's personal and social background. It covers numerous areas including demographics, family history, school history, criminal history, sexual

orientation, substance abuse, attitudes towards the future and self-harm tendencies. Its incorporation provides an opportunity to evaluate the usefulness of the SOC program, particularly the Self-Harm Tendencies component, in identifying at risk individuals.

In general, the current research adds to what is presently a sparse body of literature on the problem of suicide in correctional centers. The accumulation of data on a local population is also a valuable asset. Finally, this project serves as a pilot to determine whether further studies in a similar direction but on a larger scale would be warranted.

From a clinical perspective, one might anticipate that the availability of profiles which are "typical" of suicidal and non-suicidal inmates would be useful in alerting staff psychologists to individuals who are potentially at risk. At a more specific level, knowledge of critical item responses on standard instruments such as the BPI and SOC program, and critical levels on the Hopelessness Scale would provide additional warning signals.

Even though inventories such as the BPI are not intended for widespread use by unqualified individuals, staff psychologists could pass on to front line workers such as correctional officers and case workers, their assessment of individuals with regard to potential suicide risk. Thus a sharing of information in the best interest of the inmate is facilitated. The National Task Force on Suicide in Canada (1987) emphasized the need for this type of information flow. Indeed, many writers (Burtka, Durand and Smith, 1988; Charle, 1981; Beigal and Russell, 1972) cited lack of staff training in recognizing suicidal behavior as one of the most glaring oversights in suicide prevention.

Given the purpose of the current study and the contribution it aims to make in terms of research and clinical practice, it is important to consider

its scope and limitations. At this point, it seems appropriate to reiterate that the purpose of the study is to compare groups of suicidal and non-suicidal individuals. Thus, no attempt is made to predict suicide. Suicidal individuals include only those who have a history of one or more attempts either within or outside a correctional facility. "Suicide attempt" is defined in the terms of Miller, Chiles and Barnes (1982) as a non-fatal act in which the individual deliberately causes self-injury. Subjects are all male inmates, classified as either minimum or medium security and serving sentences of up to two years less one day. The bulk of the data was obtained through self-report, with the exception of information on past suicide attempts which was obtained from inmate files.

A number of limitations arising from the scope of the research are evident. First, not all those included in the suicidal group attempted suicide while incarcerated. A related point is inconsistency in the degree of detail on suicidal history in inmate files that made it impossible to determine where attempts took place in many cases. Caution must be exercised in generalizing the findings of this study to other inmate populations such as female inmates, or maximum security prisoners sentenced to life-terms. Finally, self-report was used in data collection; this gives rise to questions regarding consistency of response, purposefulness of responding and honesty, particularly in a population which has shown itself to deviate from the social norm of honesty.

CHAPTER II

Review of the Literature

In this chapter a review of the literature is presented with the intent of addressing two broad questions. First, the general area of assessing suicide risk is discussed with a focus on distinguishing between predicting suicide and assessing suicide risk, the use of suicide attempters in research to better understand completers, and the various clinical instruments which have been used in the study of suicide.

Second, the review provides an overview of the current understanding of suicide in prison. In this regard, factors relating to the individual are discussed such as demographic characteristics, personal history and social development. In addition, factors relating to incarceration, affective considerations and the nature of inmate suicide is discussed.

Assessing Suicide Risk

In the current study the aim is not to determine how to predict suicide, but to determine some factors which may help identify individuals who may be at risk of attempting suicide. Murphy (1984) distinguished between predicting whether persons will commit suicide in the future and identifying individuals who are at near-term risk. He noted difficulties with the statistical approach to predicting suicide such as too low a rate to provide an adequate sample size, a lack of unique predictors and too many false positives. He advocated that researchers should focus on risk detection rather than suicide prediction. Balon (1987) noted similar problems in the prediction of suicide, and added a number of methodological problems, for example, whether to define suicide as a completed act, an attempt, a single behavior or a pattern of behaviors such as continued drug or alcohol abuse, and whether to differentiate between

"normal" and "mentally ill" suicidal individuals. Ethical and practical difficulties were also considered in terms of collecting cases of future suicides.

In light of the low rate of completed suicides, a common method of studying suicidal behavior has been to study attempters. Lester, Beck and Mitchell (1979) provided evidence to support this approach in their follow-up investigation of individuals who attempted suicide. The researchers found that those who later followed through with completed suicide were similar to attempters who stated a serious intent to die with respect to scores on the Beck Depression Inventory (1961) and the Hopelessness Scale (1974). Disparity in scores increased when completers were compared with individuals whose intent to die was uncertain or who did not wish to die. In a more recent comparison of suicide attempters and completers, Michel (1987) found similarity in depressive pathology between attempters with a high intent to die and completers.

The study of suicide attempters and completers has been undertaken by using numerous instruments. One which has been widely used but with unencouraging results is the MMPI (Hathaway & McKinely, 1967). Clopton, Pallis and Birtchnell (1979) studied MMPI profiles of psychiatric inpatients and found a significant difference between suicidal and non-suicidal female groups, but no difference between male groups using a multivariate ANOVA. Discriminant analysis and cluster analysis failed to show significant differences, yielding the conclusion by researchers that the MMPI was not useful in predicting suicide. In an alternate approach, Clopton and Baucom (1979) asked experienced clinicians to study MMPI profiles and distinguish between patients who committed suicide and those who neither committed nor attempted. The clinicians were unable to

discriminate and again the limitation of using the MMPI in identifying suicide risk was noted. More recent studies by Clopton, Post and Larde (1983) and Watson, Klett, Walters and Vasaar (1984) noted similar conclusions. In one comparison, however, of patients who committed suicide within two months of completing the MMPI with patients who committed at least three months after testing, Watson, Klett, Walters and Laughlin (1983) found that the two month group showed more pathology on all scales, with the greatest difference on the Paranoia scale. These researchers concluded that suicide should be studied from the perspective of a "state" rather than an enduring trait.

Given the lack of support for using the MMPI to assess suicide risk, some writers such as Engelsmann and Annath (1981) proposed abandoning personality inventories altogether in the study of suicide and developing specific suicide scales for a variety of populations. However, a newly developed inventory, the Basic Personality Inventory (Jackson, 1988) has shown some potential in identifying suicidal individuals. The BPI was designed to assess psychopathology by tapping underlying constructs similar to those of the MMPI. In a 1982 study, Pawliuk (cited by Jackson, in press) analyzed the symptoms reported in clinical notes and on the BPI profiles of 352 psychiatric inpatients and standardized the data to a psychiatric population. Pawliuk found that patients exhibiting suicidal behavior scored significantly higher on the Depression and Deviation scales of the BPI than other, non-suicidal patients. They also received higher scores on Anxiety, Hypochondriasis, Interpersonal Problems, Social Introversion and Self Depreciation and lower scores on Denial. More recently, Helmes and Barilko (1988) compared the MMPI, the BPI and the Millon Clinical Multiaxial Inventory (Millon, 1983, 1984) with respect to

their ability to discriminate between 11 symptoms of psychopathology, including suicide attempts. Discriminant analysis did not support a high level of power for any test, but of the three the BPI performed best, discriminating suicide attempts, depression and sleep disturbance.

Further support for not relying solely on suicidal scales is provided in studies which have used the Hopelessness Scale (Beck, Weissman, Lester and Trexler, 1974). Kovacs, Beck and Weissman (1975) studied males and females hospitalized for suicide attempts. They found that Hopelessness Scale (HS) scores and Beck Depression Inventory (BDI) scores correlated positively with their criterion measure, the Current Suicidal Intent Scale (CSI). However, part correlations of the BDI with the CSI were nonsignificant, while part correlation of the HS with the criterion measure was significant, indicating that hopelessness is a more useful variable than depression in assessing suicide risk. The same researchers used the HS and BDI again in 1979 to study the correlation between hopelessness, depression and the Scale for Suicide Intention (SSI) which was designed to measure the intensity of current conscious suicidal intent. Again, hopelessness emerged showing greater correlation with suicide intent than depression. When HS scores were partialled out, no significant relationship was found between BDI and SSI scores. In a ten year follow-up study of suicidal ideators, Beck, Steer, Kovacs and Garrison (1985) found that out of the BDI, the HS and the SSI, the HS was the only instrument which differentiated significantly between suicide completers and non-completers. The researchers found that a cutoff score of nine on the HS separated the two groups. They concluded that the HS is useful in assessing suicidal risk over a relatively long time span.

Given the information just presented, it seems that the study of suicide has presented a challenge for researchers. It has been suggested that the focus should move toward assessing suicide risk rather than predicting eventual suicide. The basis for such a move lies in statistical limitations, methodological problems and ethical considerations. Also, because of the relatively low numbers of completed suicides, researchers have studied suicide attempters to increase their understanding of the phenomena.

Various instruments have been used in the study of suicide. Efforts to discriminate between suicide attempters and non-attempters using the MMPI have not been successful, yielding the suggestion to abandon personality tests in the study of suicide. However, the BPI has shown some potential in discriminating suicidal and non-suicidal individuals in a psychiatric population. Another construct, hopelessness, has shown itself to be even more closely related to suicidal ideation and intent than depression, and has been promoted for use in the study of suicide. Having discussed the study of suicide in a general sense, consideration is now given to progress in the understanding of suicide in the inmate population.

Inmate Suicide

As noted in Chapter 1, the rates of suicide and attempted suicide are significantly higher in an inmate population than in the general population. Researchers have attempted to gain an understanding of why such high rates exist by studying the problem from a variety of perspectives. In this section, the findings and conclusions based on the various approaches are discussed.

Factors Relating to the Individual

One approach has been to consider factors relating to the individual. These include demographic characteristics of age, sex and race, personal history such as family background, school performance and psychiatric history, and finally social maladjustment as reflected in interpersonal problems and antisocial behaviors. In addition, some researchers considered the issue of recent loss of a significant person in the individual's life. With respect to demographic variables, findings have not been consistent. Beigel and Russell (1972) reported from their study of inmates in Arizona jails that attempters tended to be younger than non-attempters, were more often separated or divorced and were not Caucasian. Charle (1981) suggested that with respect to age, older inmates tended to be more successful in completing suicide. She also commented that women were less likely to commit suicide and attributed this to the smaller number of women in correctional institutions, the possibility of more supportive relationships being formed between female inmates and better lines of communication between female inmates and staff. Burtka, Durand and Smith (1988) also noted female underrepresentation with regard to inmate suicide statistics. In contrast to these findings, however, Friel and Quick's (1987) review of the literature indicated that age, race, marital status and sex were not indicative of higher suicide risk. Other writers have supported this position. In his study of completed suicides in American jails, Kennedy (1984) found no significant differences in the proportion of blacks and whites who committed suicide, nor was a significant difference found with respect to age. In Canada, the 1987 report of the National Task Force on Suicide observed that neither age nor marital status correlated with inmate suicide.

While demographic variables have not been shown to be significantly related to suicide or attempted suicide, consideration of the suicidal inmate's personal and social development has resulted in more consistent findings in the literature. As with individuals in the general population it has been found that inmates who attempt or complete suicide have often had a chaotic background characterized by family dysfunction and social maladjustment. In a 1974 study of eight non-psychotic men admitted to a special prison unit for unmanageable violent behavior, Bach-Y-Rita found that all subjects had at least one serious suicide attempt. Common themes in the inmates' family histories included cruel parents, family violence, alcoholic fathers or father substitutes, loss of one parent at an early age and family members with a criminal record or history of psychiatric problems. In five cases, however, a positive maternal figure was described. Similar memories of being physically or sexually abused as a child, family violence, family members being involved in crime, family members attempting or committing suicide and loss at an early age of one or both parents through separation, divorce or death are reported by inmates at various institutions (French, 1985-86; National Task Force on Suicide in Canada,1987).

Outside the family, long-term problems with social integration and adjustment have been identified for many inmates who either attempted or completed suicide. Researchers (Stone, 1984; Burks and Deheer, 1986) noted lack of personal identity, inability to relate to a cultural or social identity and difficulty in establishing close personal relationships as factors which inhibit development of a supportive social network. The effects of such social isolation or anomie seem to be reflected in other studies. Bach-Y-Rita (1974) noted that prison suicide attempters typically

had a history of school problems and spent adolescent years struggling with depression, loneliness and violent anger. In five case studies of multiple suicide attempters, French (1985-86) found that all subjects were unsuccessful in school and had attained from a sixth to eighth grade education before dropping out.

Without established support networks, it is conceivable that other, less desirable coping mechanisms or acting out behaviors may emerge. Two such patterns which seem to be common among suicidal inmates are substance abuse and a history of prior suicide attempts. Numerous writers cited both factors as being significant aspects in the personal histories of suicide attempters and completers (National Task Force on Suicide in Canada,1987; Deheer and Schweitzer,1985). In their study which made use of a comparison group of non-attempters, Hopes and Shaull (1986) found that self-report of drug and alcohol abuse and a history of multiple suicide attempts discriminated between attempters and non-attempters. With respect to completed suicide, Backett (1987) identified drug or alcohol problems in 15 of the 33 cases studied. This researcher postulated that the initial phase of prison was particularly difficult for this group as 9 of the 15 individuals had been experiencing withdrawal symptoms at the time of their suicide. Finally, a more recent study by Burtka, Durand and Smith (1988) provided additional support. Their study of 36 verified suicides, extending over 20 years from 1967 to 1987, showed that one third to one half had made prior attempts and that one quarter had a history of alcoholism.

Another developmental factor which has been identified as relating to suicidal behavior is mental illness. Charle (1981) quotes Bruce Danto, a psychiatrist, police officer and consultant for the Wayne County jail in

Detroit as saying that "jails have become the dumping ground for the mentally ill ...". Other writers seem to concur with this position. Burks and Deheer (1986) noted depression and its related symptoms of weight loss, sleeplessness, withdrawal, lethargy, crying and expressions of hopelessness as one of the major indicators of suicide risk. Backett (1987) found that 20 of 33 individuals who committed suicide in Scottish prisons had previous psychiatric contact. An additional 11 subjects had in-patient psychiatric treatment. However, this researcher suggested that depressive illness is not as big a factor in prison suicide as in the general population. Finally, Burtka, Durand and Smith (1988) calculated that more than 95% of all completed suicides in their study had psychiatric illness, with 50% being diagnosed as depressed.

As a last consideration with respect to personal factors, a number of researchers have found a relationship between recent loss of a significant person and suicidal behavior (Stone, 1984; Burks and Deheer, 1986). Loss may occur through death of a parent or spouse, or the break-up of relationships through separation or divorce.

To summarize factors relating to the individual, it seems appropriate to refer to Maris's (1981) findings. Themes that this researcher identified as relevant in the study of inmate suicide include early trauma, social isolation, history of drug or alcohol abuse, mental disorder and a history of self or other abuse. Also, inconsistent findings in the literature do not support the use of demographic variables in discriminating suicidal and non-suicidal inmates. In addition to considering factors relating to the individual, researchers have looked at various aspects of incarceration.

Factors Relating to Incarceration

A second approach researchers have taken in trying to understand inmate suicide is to study factors relating to the institutional experience itself. These include type of institution, state on admission, nature of offence, length of sentence, history of prior incarceration, institutional conditions and staff training. Those who studied suicide in correctional centres distinguished three types of institutions; lock-ups, jails and prisons. Burtka, Durand and Smith (1988) described lock-ups as short-term, overnight facilities, jails as relatively short-term facilities for individuals awaiting sentencing or with sentences of less than one year, and prisons as housing facilities for individuals found guilty of more serious offences or given longer sentences. Much of the literature reviewed for the current study focused on jail populations but some research compared jail and prison inmates. Statistics indicate that suicidal behavior presents a greater problem in jail than in prison. Stone (1984) cited jail suicide rates of 137.5 per 100,000 as compared to 15.9 per 100,000 in prison. Similarly, Sloane (1973) noted that the attempt rate in jails was more than double that for prisons in the District of Columbia. Kennedy (1984) suggested that stress of the unknown, with respect to not being sentenced, as well as having to deal with high rates of inmate turnover may contribute to the higher suicide and attempt rates in jail. Stone (1984) added that those who are truly suicidal may have already died in jail, thus never get to prison while others enter prison with an established record of suicide attempts.

Intoxication upon admission to jail has been noted by many researchers as a factor which differentiates attempters and non-attempters (Hopes and Shaull, 1986). In their study, Deheer and Schweitzer (1985) found that six out of seven of those who attempted suicide within the first 24 hours of admission were either intoxicated or

were experiencing withdrawal symptoms from alcohol or drug use. Kennedy (1984) suggested that the psychopharmacological effects of alcohol compound the already intense feelings of depression and anxiety experienced by individuals upon incarceration.

With respect to other aspects of incarceration such as nature of the offence, length of sentence and history of prior sentencing the findings were less conclusive. To illustrate, high risk individuals were identified by Burtka, Durand and Smith (1988) as those convicted of murder or manslaughter, and by Beigal and Russell (1972) as those convicted of non-violent crimes. French (1985-86) found a mixture of crimes against person and property including drug charges, break and entry, rape and assault. Sloane (1973) found an inverse relationship between length of sentence and tendency toward suicidal behavior, while Beigal and Russell (1972) concluded that individuals facing life sentences were more desperate and chose suicide as a way out. Finally, with regard to criminal history the National Centre for Institutions and Alternatives (cited by Deheer and Schweitzer, 1985) noted that the typical suicidal inmate would not have a significant history of convictions. Topp (1979), however, examined records of 186 prisoners who committed suicide over the period from 1958 to 1971. History of crime and institutional life was cited as a relevant factor.

Some writers reported on inmates who cited intolerable conditions as contributing to high rates of attempted and completed suicide in correctional institutions (Beigal and Russell, 1972). Burtka, Durand and Smith (1988) noted overcrowding, inadequate jail supervision and underfunded capital improvements as three significant problems in Detroit's Wayne County jail. Cox, Paulus and McCain (1984) studied prison crowding by gathering archival information on over 175,000 inmates from

four U.S. state prisons and direct information from over 2500 inmates. The researchers cited evidence of the relationship between crowding and suicidal behavior from the Texas Department of Corrections and the Mississippi State Prison. With respect to the former it was found that from 1967 to 1977 housing facilities increased by 30%, but the population almost doubled. Suicide rates increased over three times the population increase. In the Mississippi institution, a court order forced a 30% decrease in population from 1976 to 1977. Over the same period, attempted suicide and self-mutilation dropped by 1.97%. The writers proposed that crowding brings with it greater anxiety about larger numbers of unfamiliar inmates, increased frustration with such things as longer lineups for meals, and more strain ensuing from increased interpersonal interaction. Thus, the added emotional and psychological burden may increase the tendency towards suicidal behaviors.

Perhaps one of the most glaring oversights which researchers have identified is the lack of staff training in recognizing and responding to suicidal behavior (Charle, 1981; Beigal and Russell, 1972). A number of writers (Backett, 1987; French, 1985-86; Hankoff, 1980) found that verbal threats or intentions of suicide are expressed in many cases of inmate suicide. However, staff either do not recognize the warnings or do not take them seriously. If suicide risk is detected, staff are often uneducated with respect to working with the inmate to help him expand his alternatives for coping beyond suicide. One of the typical responses, to place the individual in isolation, may be countereffective in preventing suicide. Albanese (1983) found that in an 18 month old federal prison in the U.S., the one suicide which succeeded occurred while the individual was isolated and placed on "administrative detention and suicidal watch". More recent

studies (National Task Force on Suicide in Canada, 1987; Friel and Quick, 1987) also found that the majority of completed suicides take place when an inmate is in isolation.

Friel and Quick (1987) described the procedure used to screen disturbed individuals and those at high risk of self-mutilation or suicide at the Edmonton Remand Centre, a short-term facility serving north central Alberta which accommodates inmates who have been remanded and await sentencing and those sentenced who are waiting for transfers to other provincial or federal centres. On intake, medical staff assess an inmate's physical and mental health. If mental illness, current suicidal ideation or past suicide attempts are indicated, the inmate is seen by psychology staff for further assessment, and if the individual is considered a risk to himself or others, is transferred to the Mental Health Unit. Psychology staff also accept referrals from correctional officers on living units when bizarre behavior, problems adjusting to incarceration or depression is observed in inmates. A staff psychologist assesses the individual and provides counselling or further evaluation when it is considered necessary.

Thus, in considering variables related to incarceration the greatest degree of consensus is in identifying the jail environment, intoxication upon admission and overcrowding as high risk factors. An additional issue raised by researchers is lack of staff training in recognizing verbal cues and in working with suicidal inmates.

Affective Considerations

In addition to exploring an individual's past experiences and behaviors, some researchers have focused on the emotions and feelings which arise during the period of incarceration. Themes of hopelessness, despair and negative feelings about the future have evolved (Hopes and

Shaull, 1986; Jones, 1986). While these themes are also cited in studies of motivation for suicide among the general population it seems that conditions specific to being placed in a correctional centre serve to exacerbate them. The National Task Force on Suicide in Canada (1987) emphasized the intensity of the loss experienced by inmates. They lose their freedom, control, privacy, contact with family and friends and status in society. Hankoff (1980) described the case of the inmate who committed suicide, but who seemed to have no psychological problems. He was, however, faced with loss of esteem and loss of status as the head of his family when he was incarcerated.

While trying to come to terms with such loss, Kennedy (1984) suggested that inmates go through a process of prisonization in which they learn to adopt the values and general culture of inmate life to compensate for their devalued status in society. However, two periods are particularly stressful during this process. When an inmate first enters the institution and is just getting oriented to prison values there is a sense of marginality or role confusion which yields feelings of depression and anxiety. Also, as the end of the sentence draws near, again a sense of marginality develops, accompanied by anxiety as the inmate anticipates his return to the "outside" and the need to become reoriented to society's norms.

French (1985-86) proposed that the feelings of depression and anxiety trigger a reaction of rage and violence, manifested in the suicide attempt. Other writers interpret suicidal behavior as a crisis reaction. Kennedy (1984) suggested that faced with the marginality of incarceration, inmates may develop tunnel vision, and fixate on suicide as the only solution or way to relieve their intense feelings. One inmate, interviewed by Bach-Y-Rita (1974) explained that he had to do something to relieve his

depression. In many cases these individuals may have been placed in isolation and were unable to see any other way to act on their feelings. For individuals who have learned to cope with feelings by action, or striking out against others, the only alternative when others are not there may be to strike out against the self.

Taking a different view, Topp (1979) interpreted suicide attempts and self mutilation as manipulative behavior. The researcher based this conclusion on the finding that most suicides occurred during the day when staff were available. However, Bach-Y-Rita (1974) and Backett (1987) cautioned against such an explanation, saying that it is oversimplistic.

Sloane (1973) encouraged a broader perspective by describing three types of suicides. Depressive suicides were said to be most common in the early phase of incarceration. Manipulative attempts were also found to be more common at the initial stage but noticeably declined as parole or release drew near. Finally, anomic suicide categorized long term prisoners who, after months or years of feeling helpless and hopeless despair of ever reaching their goal of release.

Sloane's categorization seems to accurately summarize the affective motivators of inmate suicide. However, the theoretical views of other writers, such as suicide arising out of internal role confusion, as a crisis reaction and as a turning against the self in rage also merit attention.

The Nature of Inmate Suicide

To complete the picture of inmate suicide some findings with respect to the timing and type of suicidal behavior are presented. The previous discussion highlighted feelings of intense anxiety, depression and isolation. Studies which explored the timing of suicidal behavior reflect similar themes. A range of time periods has been cited as being the most common

for suicidal behavior. Beigel and Russell (1972) found the end of the first week to the end of the sixth week to be a high risk period. Other writers (Burtka, Durand and Smith, 1988; Topp, 1979) concurred for both prison and jail settings. Others reported that as many as half of inmate suicides in jails occur within the first 24 hours of incarceration (National Centre for Institutions and Alternatives, 1981, cited by Deheer and Schweitzer, 1985). The overall consensus though seemed to be that the first few weeks, where the inmate is facing uncertainty about the length of sentence or is anticipating his institutional life, poses the greatest risk.

There was less agreement about the particular time of day when suicides are attempted or committed. Charle (1981) gave a number of possibilities including late night, late afternoon, after visiting hours and just after detention. Albanese (1983) found early morning and late evening, when staff is low and inmate activity is minimal to be critical periods for suicidal behavior. The common thread seemed to be that all times noted are when the inmate is likely to feel most alone.

As a final consideration researchers have studied the type of suicide attempts by inmates. Numerous studies have shown hanging to be the most common method for completed suicide (Burtka, Durand and Smith, 1988; Deheer and Schweitzer, 1985; Charle, 1981). Beigal and Russell (1972) noted cutting to be the most common method of attempt overall. Reiger (1971) studied suicide attempts in a federal U.S. prison and found that the severity of attempts increased with the number of attempts.

With respect to the nature of the suicide then, it seems that the first few weeks of incarceration is a critical period, that suicidal behavior usually occurs when the inmate is most likely to feel alone, and that

cutting is the most common type of behavior while hanging is the most lethal.

Summary and Conclusions

A review of the literature was conducted with a view to exploring issues in the general study of suicide as well as findings in the study of suicidal behavior in a specific population, inmates in correctional centres. With respect to the first purpose, the literature distinguished between predicting suicide and identifying factors indicative of suicide risk. The latter endeavor was more strongly promoted, based on a number of factors. Statistical difficulties presented due to low numbers of completed suicide. Methodological issues included definition of the construct, "suicidal" as well as of the suicidal population. Finally, an ethical paradox emerged in following up cases of potential suicide.

It was revealed that one approach has been to study attempters to better understand completers. The rationale for this being the similarity between attempters with a strong intent to die and completers. Another relevant consideration in the study of suicide is the research instrument. The MMPI was cited by numerous writers, but the information yielded by its use was generally inconsistent and unencouraging. A more recent but similar personality inventory, the BPI, has shown potential usefulness in discriminating between suicidal and non-suicidal individuals. Finally, researchers have found the construct of hopelessness as measured in Beck's Hopelessness scale to show a greater relationship to suicidal intent than the construct of depression.

In terms of the second purpose, gaining a better understanding of inmate suicidal behavior, it was found that factors relating to the individual's past and to the incarceration experience itself were significant.

With respect to individual factors, it seemed that demographic characteristics such as age, race, sex and marital status did not clearly differentiate attempters and non-attempters. However, personal and social histories marked by chaotic family backgrounds, lack of personal identity, difficulty forming close relationships, social isolation and school problems were common among suicidal individuals. Other related factors included ineffective coping mechanisms such as substance abuse and previous suicide attempts, and a history of psychological problems.

In studying aspects unique to the incarceration experience itself, researchers found that the jail setting and intoxication upon admission were two high risk factors. Also, overcrowding seemed to intensify feelings of frustration and anxiety, while lack of staff training was noted as a factor in the failure to recognize and cope effectively with suicidal inmates. Other variables such as nature of offence, length of sentence and history of prior sentencing did not show consistent relationships with suicidal behavior.

Also in relation to the incarceration experience, researchers have found affective considerations to be significant. The feelings of hopelessness and despair often described by suicidal individuals in the general population seem to be exacerbated by the multifaceted loss incurred as an inmate. Loss of freedom, control, privacy, social support, status and esteem was described in the literature. Writers have put forth a number of theories relating to affective factors. Suicidal behavior has been identified as the outcome of internal role confusion which is experienced in the process of prisonization. It has also been described as a crisis reaction and a turning of rage against the self when there are no other objects available to strike out against. Three broad categories of suicides have

been identified; depressive, anomic and manipulative. The latter has been criticized for being over-simplistic.

Finally, with respect to the nature of inmate suicide, it has been found that the first few weeks of incarceration, and times in the day when an inmate might feel most alone are the high risk periods. The most common type of suicidal behavior has been found to be cutting, while hanging is most lethal.

In terms of the general purpose of the current study, to identify factors which might differentiate suicide attempters and non-attempters within an inmate population, a number of pertinent research questions emerged from the literature review. These include:

Will attempters and non-attempters differ with respect to personality profiles, either overall, on specific scales or on particular items?

Will degree of perceived hopelessness differentiate the two groups?

Can suicidal and non-suicidal inmates be distinguished on the basis of personal factors such as demographic characteristics, dysfunctional family or past abuse?

Do suicidal inmates exhibit more tendencies to social difficulties and poor coping mechanisms as reflected in such factors as school problems, substance abuse and emotional problems?

Do factors relating to incarceration influence the tendency toward suicidal behavior?

Are suicidal inmates likely to experience more intense feelings of loneliness or social isolation than non-suicidal inmates?

CHAPTER III

Method

This chapter details the methodology of the current study. Subject selection and instrumentation are both described, and the process of the research is overviewed. Presentation of the research questions and a discussion of the statistical analysis completes the chapter.

Subjects

Forty male inmates from the Fort Saskatchewan Correctional Institution in Fort Saskatchewan, Alberta participated in the study. Subjects were selected by reviewing the files of offenders who were incarcerated during the period from August, 1988 to at least October 12, 1988 and who, at the time of assessment would have been at the institution for at least four weeks. Offenders whose files indicated a past history of suicide attempts were assigned to a "suicidal" group. Potential subjects for this group met one or more of the following criteria: Recent attempts, a large number of attempts and life-threatening attempts in terms of type of attempt. In some cases the attempt was made while the individual was incarcerated and in other cases the attempt was made outside a correctional facility. Some files did not indicate where the attempt took place, providing details on the date and type of attempt only.

Each potential subject for the suicidal group was approached individually and asked to volunteer to participate in the study until a target figure of 20 subjects was reached. For comparison, a group of 20 inmates who had no record of suicide attempts according to their files, was constructed by randomly selecting inmate names and again, approaching each individual to ask for his participation. Participants were told that the research would provide baseline data for the Basic Personality Inventory

(Jackson, 1988) and the Reddon-Jackson Social History Program (Reddon & Jackson, 1988; version one). Participants had the option of discussing the results of the assessments on an individual basis after all testing was completed.

In the suicidal group participants ranged in age from 19 to 46 with an average age of 27.75 years. In terms of ethnicity, 70% were Caucasian, 15% Registered Indian and 15% Metis. Thirteen of the subjects had made their most recent suicide attempt in the twelve months prior to testing, ten of whom had attempted within six months. For three subjects, it was not clear when the last attempt had been made. On average, the most recent attempt was approximately nine months prior to testing. All subjects except one had multiple suicide attempts; five subjects' files did not specify the number of previous attempts, but for the remaining members the average was three. The most common type of suicide attempt based on the most recent attempt was slashing, 35%, followed by overdose, 20%. Other attempts included hanging, shooting, jumping in front of cars, driving into a light pole, and swallowing razor blades.

In the non-suicidal group the average age was 25.2 years, with a range of 18 to 51 . Caucasian subjects comprised 60% of the group, Registered Indians 20% and Metis 20%.

Instruments

Two instruments were used to carry out the study, the Basic Personality Inventory (Jackson, 1988) and the Reddon-Jackson Social History Program (Jackson & Reddon, 1988; version one).

The Basic Personality Inventory (BPI) is a 240 item questionnaire designed to assess psychopathology. However, given the bipolar nature of scale design it can also be used to identify areas of personal strength and

normal functioning. The BPI is comprised of statements which describe activities, interests and characteristic behavior, and which require the respondent to indicate whether or not each statement describes him by answering True or False. The goal in designing the BPI was to assess dimensions of psychopathology which underlie the MMPI clinical scales. However, unlike the MMPI the BPI scales were developed on a construct oriented rather than an empirically based approach. Also an attempt was made in constructing the BPI to eliminate overlap between the scales. Vocabulary used in the BPI items is at about a grade five level, thus it is appropriate for use with populations which may have wide variations in inter-group ability.

Researchers have addressed the issue of motivated distortion or faking, and the effect of response styles on BPI results. Kilduff and Velicer (in press; cited by Jackson, in press) found that Deviation and Self-Depreciation scores were most sensitive to motivated distortion in a negative direction while Denial scores tended to reflect "faking good". Similarly, Helmes and Holden (1986) found that the same three scales, Denial, Self-Depreciation and Deviation, were sensitive to motivated distortion. Using these scales they were able to classify correctly 90% of those faking bad and 75% of those faking good.

Reliability of the BPI was established by assessing internal consistency, item factor structure and test-retest stability. Holden, Reddon, Jackson and Helmes (1983) did a separate analysis on each of three samples; a "normal adult" group, psychiatric inpatients and high school students. KR-20 values were cited as evidence of internal consistency. For the normal group values ranged from .61 on Self-Depreciation to .83 on Depression. The psychiatric group range was from .67 on Denial to .89 on

Depression, and the high school group had KR-20's from .57 on Anxiety to .80 on Depression.

Using the same samples Holden et al. (1983) assessed the item factor structure of the BPI and found that 96, 99 and 98 percent of items loaded in a keyed direction for the normal, psychiatric and high school samples respectively. Loadings for keyed items were larger for non-keyed items across all samples and were larger than loadings from parallel sets of random data. Test-retest studies, using a one month retest interval were carried out by Holden, Helmes, Fekken & Jackson (1985) and Kilduff (1979; cited by Jackson, in press). Holden et al. reported values ranging from .63 on Denial to .87 on Social Introversion. Kilduff's results were in a similar range, from .62 on Self Depreciation to .85 on Depression.

Validity of the BPI scales is explored in studies by Holden, Helmes, Jackson and Fekken (1983; cited by Jackson, in press) and Holden, Fekken, Reddon, Helmes and Jackson (1988). In the former study, researchers reported an accuracy rate of 33.2% in using the BPI to predict the diagnoses for psychiatric inpatients. They concluded that this was a significant increase over the chance rate of 14.3%. In a more recent study by Holden et al. (1988) an attempt was made to establish construct validity by correlating BPI content and factor scale scores with a 44 point criterion measure. Convergent validity was evidenced in correlations averaging .36 for BPI content scales and .44 for the factor scales of Psychiatric Symptomatology, Social Symptomatology and Depression. When adjustments were made to account for criterion unreliability averages increased to .49 and .55 for content and factor scales respectively. Discriminant validity was indicated in that, with the

exception of the Denial scale, BPI scales correlated more highly with their relevant criterion scale than with non-corresponding critierion measures.

Austin, Leschied, Jaffe and Sas (1986) examined the factor structure of the BPI and found three factors. The first, Psychiatric Symptomatology, encompassed the scales of Thinking Disorder, Hypochondriasis, Anxiety, Deviation and Persecutory Ideas. The second factor, Depression, included Self-Depreciation, Depression and Social Introversion. Finally, the Social Symptomatology factor was comprised of the scales Alienation, Interpersonal Problems and Impulse Expression. The twelfth BPI scale, Denial, was incorporated as a measure of test taking style.

The BPI may be both administered and scored either by hand or computer. The computer-scored printout provides a profile of individual scale scores, converted to T-score equivalents as well as raw scores. It also gives an assessment of the validity of the results, trait descriptions for high and low scorers on each scale, 95% confidence intervals around the true scores, a listing of critical items endorsed and a matrix indicating all raw BPI responses.

The second instrument used, the Reddon-Jackson Social History (SOC) Program (1988) is designed to gather information about an individual's social background. The SOC is made up of eleven sections which cover introductory demographic information, offence history, school history, family history, family of origin scale, sexual orientation and behavior, tobacco use, alcohol use, drug use, attitudes about the future and self-harm tendencies. Scoring is done in two sections only, the family of origin scale and the attitudes about the future. The former was not included in the current study but the section, attitudes about the future, was a significant focus of the research. This latter section used the Bek Hopelessness Scale

to provide an indication of each respondent's future outlook. This is a 20-item inventory with 11 true keyed and 9 false keyed statements. A score of 9 or more is considered high. Beck, Weissman, Lester and Trexler (1974) reported on the reliability and validity of the Hopelessness scale. Correlations were found to be 0.93 for internal consistency, 0.57 mean item-total correlation and 0.60 to 0.63 with respect to concurrent validity, using clinicians' ratings of hopelessness and two other measures of pessimistic expectations.

The SOC Program is designed primarily to be computer administered and scored. A computer generated SOC Report contains a listing of all items and responses, a profile on the Family of Origin Scale and a score for the Beck Hopelessness Scale. In this study, however, a paper and pencil version of the SOC was administered to facilitate group testing and the Hopelessness Scale was hand scored.

Procedure

All subjects completed paper and pencil versions of the Basic Personality Inventory and the Reddon-Jackson Social History. Testing was carried out in a group setting, with both tests being administered in the same session. Nine testing sessions were held to accommodate the forty participants.

In each session, standard instructions were given for the completion of the inventories. For the BPI, participants were asked to indicate "True" or "False" for each statement, depending on whether or not they felt a particular statement applied to them. No interpretation of statements was given by the researcher. The SOC was introduced by explaining that it asked questions about various aspects of a person's background including

family life, offence history, school history, substance use and attitudes about the future.

Subjects were asked to pay attention to the instructions in branching statements to avoid responding unnecessarily to questions. For example, in Section I of the SOC the instruction following question 6, "What country were you born in?" is "If born in Canada go to 9". Also, they were asked to make answers as complete and accurate as possible. Finally, in Section II, Offence History, the word "detention" was pointed out as meaning the same as "incarceration" to avoid confusion with juvenile detention. Respondents were asked to consider all periods of incarceration, whether in juvenile or adult centres. The researcher was present to answer questions regarding branching, but again no interpretation of statements was given.

BPI responses were entered onto a computer to obtain a profile of each individual. Both raw scores and T-scores were provided for each sub-scale. Also the computer-printout provided a listing of critical inventory items which were answered in the keyed direction for each respondent. The SOC program results were not computer scored. The one sub-section which required scoring, the Beck Hopelessness Scale, was hand-scored. All other sections under consideration did not require scoring. Instead, responses were examined to get an overview or general impression from a clinical perspective of the various areas covered.

Research Questions and Statistical Analysis

In the current study questions related to the Basic Personality Inventory and the Reddon-Jackson Social History program are identified. Thus, two purposes are served. First, it helps determine whether the population under study is consistent with findings in the literature. As well, from a clinical perspective it indicates how useful the two inventories

noted may be in screening inmates for suicide risk. Research questions are presented below, along with a description of the methods of analyses. Development of the research questions parallels the review of the literature.

Assessing Suicide Risk

1. Do BPI profiles differ with respect to suicidal and non-suicidal inmate groups? In order to answer this question a one way MANOVA comparing BPI raw scores of suicidal and non-suicidal inmates was calculated.

2. Are there specific BPI subscales which are useful in differentiating the groups? Mean scores of BPI subscales were calculated for both groups and F-tests applied to detect significant differences between groups on each subscale.

3. Are there particular BPI critical items which are endorsed more frequently by suicidal inmates as compared to non-suicidal inmates? This was explored by determining and comparing the proportion of inmates in each group who responded in the keyed direction on each critical item. Critical items include all those from the Deviation subscale as well as those from the Hypochondriasis, Depression, Persecutory Ideas, Anxiety, Thinking Disorder and Self-Depreciation scales.

4. Do scores on the Hopelessness Scale reflect a difference between suicidal and non-suicidal groups? A t-test was applied to the mean scores for each group to determine the significance of the difference.

5. What differences exist between suicidal and non-suicidal groups with respect to relationships between BPI subscale scores and Hopelessness Scale scores? Correlations between Hopelessness Scale scores

and scores on each BPI subscale were calculated for both groups. Significance of the difference in correlations between groups was tested.

Factors Relating to the Individual

6. Can suicidal and non-suicidal groups be differentiated with repect to demographic factors? A t-test was performed on mean age, while the differences in proportions were tested on variables of ethnicity and place of residence.

7. Are more signs of family dysfunction or instability evident in the suicidal group as compared to the non-suicidal group? Again, t-tests and tests on differences in proportions were used to show whether significant differences exist between groups on variables such as; number of moves since birth, being raised by natural parents, occupation and educational level of parents, history of crime, emotional problems, substance abuse and suicide in the family, number of deaths in the family and age at death of either parent.

8. Are suicidal inmates more likely than their non-suicidal counterparts to have experienced or been exposed to physical abuse? The proportions of inmates in each group who have been beaten or who have seen other family members be physically abused were calculated. The significance of the difference between groups was tested for each variable.

9. Is social maladjustment relflected in acting out at an earlier age with suicidal as opposed to non-suicidal inmates? The mean age at the initiation of acting out behaviors such as breaking the law, drinking and using drugs was calculated for each group and significant differences checked using t-tests.

10. Is there more evidence of a history of school difficulties with suicidal as opposed to non-suicidal inmates? Tests on the significance of

differences between groups were applied to such variables as attitude toward school, grades achieved, need for remedial classes, the proportion of respondents who failed or accelerated grades, the proportion who were suspended and the level of education.

11. Are suicidal inmates more likely to have other inappropriate coping mechanisms? To address this broad question three specific areas were examined; alcohol abuse, drug abuse and self-harm tendencies. Groups were compared using t-tests on the level of drinking, level of drug use and number of different drugs used. Differences in proportions were tested on level of drinking compared to friends and whether respondents injected drugs. As well, for those inmates who had attempted suicide the proportions who had used drugs and who had used alcohol prededing the attempt were calculated. Also, 95% confidence intervals for these proportions were constructed. Finally, the proportion of respondents in each group who acknowledged previous self-harm was compared.

12. Is a history of emotional or psychological problems more common with suicidal as opposed to non-suicidal inmates? The difference between groups in the proportion of inmates who received psychological help in the past was tested. Also, a t-test was applied to the difference in mean age of last seeking help for each group.

Factors Relating to Incarceration

13. Is there a difference between suicidal and non-suicidal inmates with respect to number of times arrested? A t-test was used to check the difference in mean number of arrests for each group.

14. Is there a difference between suicidal and non-suicidal inmates in terms of number of convictions? Significance of the difference between group means was assessed with a t-test.

15. Do suicidal inmates have a longer criminal history than non-suicidal inmates? The number of years from age at first arrest to age at last arrest and age at first conviction to age at last conviction was calculated for each respondent and means were determined for each group. A t-test on the means indicated the significance of the differences between the groups.

Affective Considerations

16. Are suicidal inmates likely to perceive less social support than non-suicidal inmates during the period of incarceration? Frequency of visits by relatives and friends was compared by calculating the proportion of inmates in each group who were visited "never", "once", "a few times" or "many times". Significance of the difference in proportions for each category was tested.

17. Are suicidal inmates likely to feel a sense of anomie or isolation? Two variables were considered here; whether the respondent could think of anything that would keep him from killing himself and whether he could think of a reason to stay alive. The proportions of inmates responding "no" on each of these variables were calculated and 95% confidence intervals constructed.

CHAPTER IV

Results

The results of the data analysis described previously are now presented by addressing each of the research questions posed in Chapter III. In the analysis an alpha level of .05 was deemed necessary to reject the null hypothesis. With respect to t-tests, separate variance estimates were used as the subjects were not randomly assigned to treatment groups. Thus, the assumption of equal variance in the two populations, as is required in using a pooled variance estimate, could not be made.

In reviewing subjects' responses in the Self-Harm Tendencies section of the SOC Program it was found that one subject in the suicidal group denied ever attempting to commit suicide. In the group classified originally as non-suicidal three inmates claimed to have attempted suicide in the past. These responses contradicted information from the inmates' files, which were used to assign subjects to respective groups. To reduce potential error or bias that might arise from the inconsistent data these four subjects were eliminated from statistical analysis. Results of the analysis of the data for the remaining 36 subjects are presented to correspond with the research questions listed in Chapter III.

Assessing Suicide Risk

The initial question of interest was whether suicidal and non-suicidal inmate groups differed with respect to BPI profiles. A Hotelling T2-test performed on the raw scores of the personality profiles yielded a T2 value of 1.65354 with an F-ratio = 3.16929 at 12 degrees of freedom. The corresponding probability of .008 indicated a significant overall difference in profiles (see Table 1).

Univariate F-tests with (1, 34) degrees of freedom were conducted on mean scores of BPI subscales to determine whether specific scales would be useful in differentiating suicidal and non-suicidal groups. Table 1 indicates that two scales, Hypochondriasis and Deviation, showed significantly higher mean scores for the suicidal group.

In an attempt to identify more specific differences between suicidal and non-suicidal inmates in terms of their BPI responses, individual BPI critical items were studied by comparing the proportion of respondents in each group who endorsed each item. Table 2 shows the largest differences between groups to reflect depressive symptoms such as impaired memory (#24), depressed mood (#170) and trouble sleeping (#240). On each item a difference in proportion of at least .35 was found. Two other items, 120 and 216, from the Deviation subscale of the BPI yielded differences of at least .25 between the two groups.

The usefulness of the construct, hopelessness, in differentiating suicidal and non-suicidal groups was assessed by performing a t-test on the means of the Hopelessness Scale scores for the two groups. The suicidal group had a mean score of 4.4211 and a standard deviation of 4.718, while the non-suicidal group mean was 2.4118 with a standard deviation of 2.265. A resulting t-value of 1.66 (26.49 D.F.) and a two-tail probability of .110 was not sufficient for rejection of the null hypothesis. While the difference in means did not reach statistical significance the difference between groups in terms of variance merits attention. In the suicidal group the standard deviation was found to be more than twice that of the non-suicidal group. Also, examination of the frequency distribution of the Hopelessness Scale scores, depicted in Figure 1, reveals a cluster of 15 out of 17 non-suicidal subjects in the lowest score range of 0 to 4, as compared

to 12 out of 19 suicidal subjects. Three subjects, all from the suicidal group, scored higher than the cutoff level of 9.

In looking at the relationship between Hopelessness Scale scores and BPI subscale scores, differences between suicidal and non-suicidal groups emerged. Correlations between Hopelessness scale scores and BPI subscale scores were calculated and the difference between groups with respect to correlations was tested. As shown in Table 3, correlations between Hopelessness scale scores and BPI subscales were significant on all but the Denial and Alienation scales for the suicidal group, using $p < .05$. For the nonsuicidal group, Hopelessness Scale scores correlated significantly only with the BPI sub-scales Self-Depreciation and Deviation. Tests of the differences between correlations on each BPI subscale reached significance on the Depression and Interpersonal Problems scales, with p values of .00494 and .02117, respectively.

Factors Relating to the Individual

The initial area of inquiry with respect to factors relating to the individual was that of demographic characteristics. As indicated in Table 4, a t-test on the mean age for each group and tests on differences in proportions in terms of usual place of residence and ethnicity, failed to yield significant results.

A second area thought to be relevant, family dysfunction or instability, was assessed using a number of variables summarized in Table 5. A significant difference was found between groups with respect to mean number of moves since birth, but with subjects in the non-suicidal group showing more moves on average (1-tail $p = .0135$). One other significant difference was found between groups with the proportion of fathers who did not finish high school. Subjects in the non-suicidal group yielded the

higher proportion (1-tail p = .0207). On the following factors no significant differences were found; being raised by natural parents, occupation of parents, mother's education level, history of crime, emotional problems, substance abuse and suicide attempts by either parents or siblings, loss through death of parents or siblings, and age at death of parents.

The extent of physical abuse either experienced or observed was explored, again by testing the difference in proportions between groups. No significant differences were found between groups with respect to experiencing or observing any physical abuse, and experiencing or observing severe abuse (see Table 6).

Social maladjustment was assessed by performing t-tests on the mean age of initial acting out behaviors for each group. Results are presented in Table 7. The mean age for first use of drugs was significantly lower for the non-suicidal group as reflected in a t-value of 2.58 (1-tail p = .008). Other variables, including age at first arrest, first conviction and first drink did not reach significance.

Both groups were compared to determine whether differences existed in relation to school history. As indicated in Table 8, t-tests and tests on differences between proportions did not show statistically significant differences except on one variable, number of grades accelerated (t-value = 1.76, 2-tail p = .089). The suicidal group mean was .5789, compared to .1176 for the nonsuicidal group. Given the nature of the variable, the practical significance of this difference is questionable.

Possible differences between suicidal and non-suicidal groups in terms of a tendency to resort to inappropriate coping mechanisms was another question of interest. Variables which would indicate abuse of alcohol or drugs were studied, but as Table 9 reveals, no between group differences

reached significance. However, it may be worthwhile to note that for individuals who did attempt suicide, use of either drugs or alcohol preceding the attempt was a relevant factor. The proportion of subjects who used alcohol prior to attempting suicide, 0.6111, was greater than the proportion, 0.3529, who acknowledged using drugs before an attempt. For both variables however, 95% confidence intervals constructed around these proportions exceeded zero.

One other question, the first in the Self-Harm Tendencies section of the SOC Program, reflects inappropriate coping mechanisms. It asks "Have you ever tried to harm or cause physical pain to yourself?" None of the non-suicidal group acknowledged such behavior while 13 of the suicidal inmates did, yielding a significant difference between groups (1-tail p = .00002415).

A last consideration with respect to individual factors was history of emotional or psychological problems. A test comparing the proportions of suicidal and non-suicidal inmates who had received help for psychological problems in the past revealed that the proportion for the suicidal group was significantly higher (1-tail p = .03115). Also, a t-test on the difference between the means of age last sought help showed the suicidal group, on average, to have been significantly older. Mean age for the suicidal group was 23.3333 compared to 17.1429 for the non-suicidal group (t-value = 4.07, 1-tail p = .0005). Table 10 presents the foregoing results.

Factors Relating to Incarceration

Given the population under study, a number of research questions addressed the impact of incarceration on the tendency toward suicidal behavior. The first question asked whether there was a difference between suicidal and non-suicidal inmate groups in terms of the number of times

arrested. The mean number of arrests in the suicidal group was 18.1111, compared to 12.5714 in the non-suicidal group. A t-test on the difference between means yielded a value of 1.55, which did not reach significance (1-tail p = .0665).

A second consideration, number of times convicted, yielded a significant difference between groups. A t-test produced a value of 1.85, indicating that the mean number of convictions for suicidal inmates, 17.1111 was significantly higher than that for non-suicidal inmates, 8.9375 (1-tail p = .039). For both factors wide variances were found in each group. Number of arrests for the suicidal group showed a standard deviation of 12.68 compared to 7.38 for the non-suicidal subjects. Also, with respect to number of convictions greater dispersion was found in the suicidal group, with a standard deviation of 17.62 compared to 5.88 for non-suicidal respondents.

Possible difference in length of criminal history was explored by comparing mean number of years from first to last arrest, and from first to last conviction. However, t-tests failed to show significant differences on either variable. Table 11 summarizes the analysis of factors relating to incarceration.

Affective Considerations

The final broad area of study with respect to comparing suicidal and non-suicidal inmates is affective considerations. A related question in the current research was whether suicidal inmates perceived less social support than non-suicidal inmates during the period of incarceration. One way of measuring this was thought to be comparing groups in terms of frequency of visits by relatives and by friends. Table 12 presents the

results of this proportional analysis and reveals non-significant differences between the two groups.

The final research question asked whether inmates who attempted suicide were likely to feel a sense of anomie or isolation. To answer this, the proportions of suicidal inmates who could not think of anything that would keep them from killing themselves and who could not think of a reason to stay alive were calculated. 40% of the respondents could not think of anything that would prevent them from killing themselves, while 80% could not think of a reason to live. For both variables 95% confidence intervals around these proportions were greater than zero.

CHAPTER V

Conclusions, Discussion and Recommendations for Further Research

The foregoing study compared suicidal and non-suicidal inmates at Fort Saskatchewan Correctional Centre, a medium security facility in Alberta, with a view to identifying factors which may differentiate the two groups. The Basic Personality Inventory and the Reddon-Jackson Social History Program were used to assess personality traits and gather historical data pertaining to each individual's personal and social background. Thus, the purpose was not only to determine how similar this sample was to other groups described in the literature, but to assess the value of these inventories in screening inmates for suicide risk. More specifically, the researcher was interested in whether personality profiles as measured by the BPI differed for suicidal and non-suicidal groups, whether particular scales were useful in differentiating the groups and which critical items tended to be answered more frequently by suicidal inmates. The Reddon-Jackson Social History Program (SOC) yielded information which made possible a comparison of this group to other suicidal inmate groups described in the literature who were characterized by various combinations of factors including unstable family background, psychiatric problems, low academic achievement, inappropriate coping mechanisms and feelings of social isolation or alienation. Finally, the Beck Hopelessness Scale, incorporated into the SOC, provided an opportunity to explore the usefulness of the construct, hopelessness, in assessing suicide risk.

Conclusions

Based on the results of the statistical analysis, the following conclusions can be made:

1. An overall difference between groups was indicated with respect to personality profile, as measured by the BPI. All scales except for Social Introversion were elevated for the suicidal group, but two scales, Hypochondriasis and Deviation, showed significantly higher mean scores for suicidal inmates. Also, in examining critical items responded to in the keyed direction, those reflecting depressive syptoms and deviation from social norms were found to yield the greatest difference between groups in terms of frequency of response, with suicidal inmates endorsing such items more often.

2. Difference between groups with respect to mean Hopelessness Scale scores did not reach statistical significance. It was found that a greater dispersion in scores existed for the suicidal group, and that suicidal inmates were the only respondents to score above the cutoff point of nine. A greater proportion of non-suicidal inmates had scores which clustered in the low range of zero to four.

3. Differences between the suicidal and non-suicidal groups emerged in terms of correlation between Hopelessness Scale (HS) and BPI sub-scale scores. A significantly stronger relationship was found between HS and Depression, as well as Interpersonal Problems for the suicidal group.

4. Demographic characteristics of age, place of residence and ethnicity were not useful in distinguishing between the two groups.

5. Overall, similar profiles were indicated for suicidal and non-suicidal individuals with respect to family background. Most respondents

were raised by natural parents, had fathers who were employed in unskilled jobs or trades and mothers who were housewives. Both groups showed evidence of either parents, brothers or sisters being involved in crime or having problems with drug or alcohol abuse. Significant differences were found on two variables, number of moves and father's education level, but in the opposite direction than was expected.

6. In both the suicidal and non-suicidal groups between one third to one half of respondents either experienced or observed physical abuse, with no significant differences between the groups.

7. Differentiating groups in terms of variables that might reflect social maladjustment, such as initial age of drug and alcohol use, or age at first arrest and conviction did not prove useful. Only one factor was significant, with the non-suicidal group using drugs at an earlier age.

8. Some evidence of greater difficulty in school was found for the suicidal group on the variable, "kicked out of school once". Both groups were similar in terms of level of education achieved.

9. Both suicidal and non-suicidal inmates revealed some inappropriate coping mechanisms in terms of substance abuse. For the suicidal group use of alcohol or drugs preceding an attempt was found to be common. Finally, only suicidal inmates acknowledged a history of self-harm behaviors.

10. Statistically significant differences between groups provided evidence that a history of emotional problems was more prevailent with suicidal inmates, and that suicidal inmates would typically have sought help for these problems more recently than non-suicidal inmates.

11. With respect to factors relating to incarceration some support was found for the idea that extent of criminal history might differentiate

suicidal and non-suicidal inmates in that suicidal respondents reported a significantly higher number of convictions.

12. Variables which focused on affective considerations, such as lonliness or social isolation indicated some degree of alienation. While a comparision of suicidal and non-suicidal groups did not show substantive differences in terms of visists by friends or relatives, large proportions of suicidal inmates reported that they could not think of any reason not to kill themselves, or to stay alive.

Discussion

In considering the findings of this research, it is important to recognize that the study was carried out on a relatively narrow population. That is, respondents were all from a medium security prison, were serving sentences of two years or less and were all male. However, the research did yield conclusions similar to those of other studies in the area of inmate suicide.

Although the literature produced differing opinions regarding the usefulness of personality inventories in distinguishing suicidal individuals, this study indicated that the BPI might be a useful tool. It was found in comparing suicidal and non-suicidal inmates that not only were there overall profile differences, but that two scales, Deviation and Hypochondriasis, were significantly higher for the suicidal group. Pawliuk (1982; cited by Jackson, in press) found similar results in his comparison of suicidal and non-suicidal psychiatric inpatients, in that suicidal patients had elevated Deviation and Depression scores. In the current research, although Depression scores were not significantly higher, examination of critical items indicated that depressive symptoms were more frequently noted by suicidal inmates. This approach, of examining specific critical

items, was not taken by other researchers but seemed helpful in specifying between group differences.

Although between group differences did not reach statistical significance, there was some evidence that feelings of hopelessness or negative feelings about the future was a relevant factor for suicidal inmates. Hopelessness Scale scores were more dispersed for the suicidal group, and as Kovacs, Beck and Weissman (1979) found, only suicidal individuals scored at or above the cutoff of nine points. Finally, a stronger relationship between Hopelessness Scale scores and both Interpersonal Problems and Depression was found for the suicidal group, suggesting a relationship between emotional problems, hopelessness and suicide.

In exploring factors relating to the individual, it was found that demographic variables were not helpful in distinguishing suicidal individuals This concurred with the research of Kennedy (1984) and the National Task Force on Suicide in Canada (1987). As in other studies such as Bach-Y-Rita (1974) and French (1985-86), evidence was found of family dysfunction in that many suicidal inmates experienced or were exposed to physical abuse, and had either parents or siblings with a history of crime or substance abuse. A gap in other research studies was found in the lack of comparative data. The researchers noted focused only on suicidal inmates, thus while family dysfunction might be typical, it could not be determined whether such variables would be useful in terms of differentiating suicidal and non-suicidal groups. In this study a comparative analysis was done and overall indicated similar family backgrounds for both groups. One notable, but not statistically significant, difference for the suicidal inmates was that they had consistently higher

proportions of respondents whose family members had a history of emotional problems and or suicide attempts.

Individual factors which might reflect social maladjustment did yield some differences between groups. For example, as Bach-Y-Rita (1974) and French (1985-86) noted, suicidal inmates had below average grades and often needed remedial classes. However, between group differences were not statistically significant. Also, as Hopes and Shaull (1986) found, suicidal inmates reported more extensive abuse of alcohol than non-suicidal respondents. These researchers also found more extensive drug abuse but the current research did not indicate a difference between groups. Finally, this study did give additional support to the idea that suicidal inmates often had a history of emotional problems. Backett (1987) and Burks and Deheer (1986) noted significant proportions of suicidal inmates having previous psychiatric contact. The current research found that significantly higher proportions of suicidal inmates as compared to non-suicidal sought help for emotional problems in the past, and sought help more recently than their non-suicidal counterparts.

Factors relating to incarceration were not dealt with extensively in the current study as information on criminal history was restricted to that solicited in the Social History Program. Significant differences were found with suicidal inmates having a higher number of convictions than non-suicidal. Findings in the literature with respect to such variables were inconsistent.

As in the research of French (1985-86) and Bach-Y-Rita (1974) indications of the need to act out feelings in a violent way were reflected in the responses of suicidal inmates who reported past tendancies of self-mutilation. Also, this group more often responded positively to a BPI

critical item which reflected a plan to do something violent or dangerous if the individual's situation did not improve. Also, as a final consideration, themes of hopelessness, despair and loneliness did seem significant for suicidal inmates who noted that they could not think of a reason to go on living. Similar themes were revealed in the work of Hopes and Shaull (1986) and Jones (1986).

In general, for the particular population under study, the factors which seemed to be most consistent and most helpful with respect to differentiating suicidal and non-suicidal inmates included evidence of personality problems or emotional disturbance, negative attitudes toward the future and feeling that there was nothing or no one that could provide a reason to go on living. Also, a family history of emotional problems and past suicide attempts seemed relevant. The lack of significant between group differences in areas such as family dysfunction or social maladjustment might be attributed to a number of factors. Small sample sizes might require larger differences in order to attain statistical significance. Also, the nature of the population might have influenced the results. Inmates, both suicidal and non-suicidal have demonstrated deviation from social norms. This population overall is typically found to have histories of unstable family life and problems adjusting in society. Thus, in trying to differentiate two subgroups within this population it is conceivable that other, more individually related factors would need to be isolated and studied.

Recommendations for Further Research

The broad purpose of this study was to gain a better understanding of suicidal inmates and identify factors which might differentiate them from non-suicidal inmates. Subjects were not limited to those who

attempted suicide while in prison, thus it was not possible to speculate on factors specific to the incarceration experience itself which might trigger suicidal behavior. Given that suicidal behavior is more prevailent within the inmate population as compared to the general population, these factors might warrent further research. Aspects such as type of attempt, time of day, phase of sentence and length of sentence might be included.

Given that some meaningful between group differences were identified in this study, which used a relatively small sample size, it might be worthwhile to expand the study to incorporate inmates from different correctional institutions throughout Alberta. This would allow for within group analyses as well. For example, male and female suicidal and non-suicidal inmates could be compared, as could inmates from different types of institutions such as remand centres, medium security facilities and federal institutions. Also, a larger sample would allow within group comparisons of suicidal inmates based on recency of attempt and lethality of attempt.

A broader based study could be used to establish baseline data for the BPI and scales within the SOC including the Family of Origin scale and the Beck Hopelessness scale. Clinicians and researchers could benefit from such information.

Finally, while there can be no guarantee of the validity of self report instruments, computer administration might reduce some problems, particularly with inventories such as the SOC. The computer program avoids confusion by branching automatically for respondents and does not allow respondents to omit questions. While practitioners may value such advantages, the trade-off for researchers is in the additional time required to accumulate a large sample through individual computer testing.

With respect to implications of this study's findings for practitioners, it should be noted that for both suicidal and non-suicidal inmate groups there is an abundance of evidence of dysfunctional family backgrounds, social maladjustment and substance abuse. This points to the need for ongoing counselling and programs to help inmates develop coping and other "life skills". Information yielded in the BPI and SOC could be useful to practitioners in developing counselling and other program goals for inmates. Summaries of the information yielded could be compiled by the institution's psychologist, providing case workers with pertinent data. However, advocating widespread administration of these tests does not seem justified at this point, without broader based research.

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Figure 1. Hopelessness Scale Scores for Suicidal and Non-Suicidal Inmates

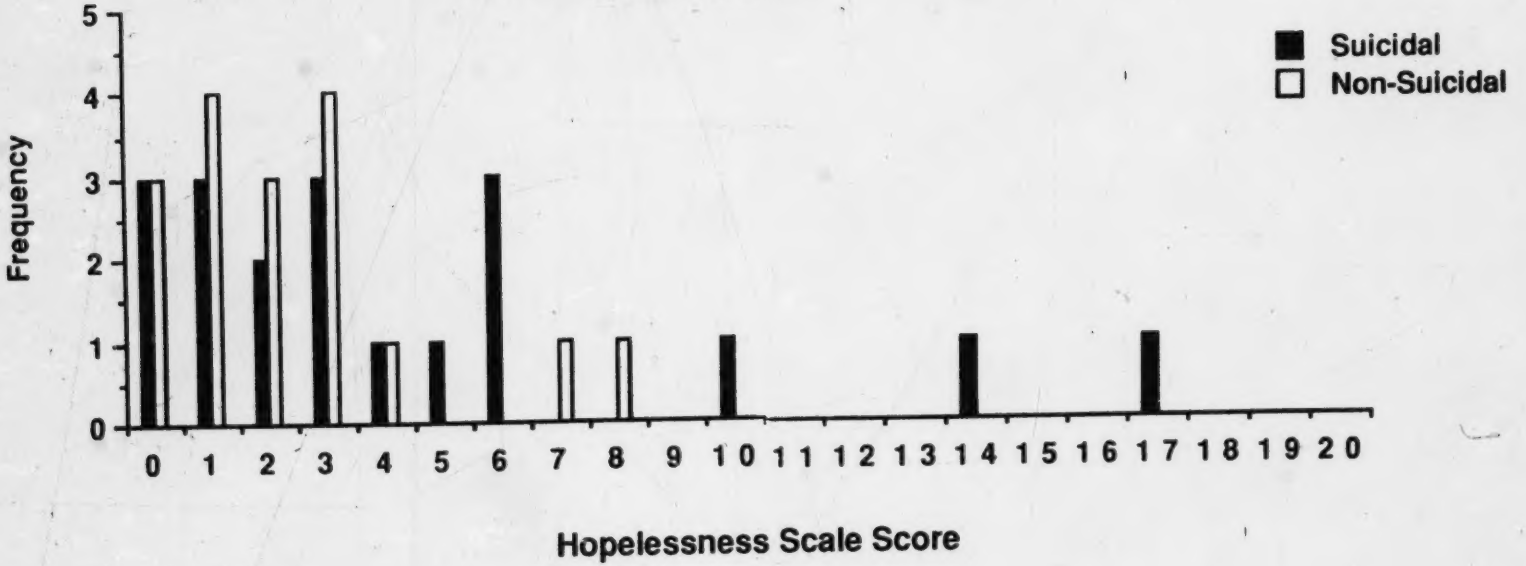

Table 1
Means and Standard Deviations for raw scores on each BPI scale for suicidal and non-suicidal inmate groups with subscale F test results

BPI Scale	Suicidal		Non-Suicidal			
	Mean	S D	Mean	S D	F	p
Hypochondriasis	7.21	4.48	4.24	2.73	5.62	.02
Depression	7.26	4.66	6.06	2.73	.87	.36
Denial	7.21	3.22	7.18	3.03	.00	.97
Interpersonal Problems	9.68	4.41	9.47	2.88	.03	.87
Alienation	9.42	3.13	7.76	2.77	2.79	.10
Persecutory Ideas	7.68	4.28	6.65	2.45	.77	.39
Anxiety	6.90	3.43	6.06	2.30	.72	.40
Thinking Disorder	4.95	4.28	3.71	3.06	.98	.33
Impulse Expression	9.68	3.80	7.82	3.61	2.25	.14
Social Introversion	7.00	4.33	8.12	5.41	.47	.50
Self Depreciation	4.63	3.93	4.00	2.98	.29	.59
Deviation	8.53	4.49	5.41	2.87	5.98	.02

Suicidal n=19, Non-Suicidal n=17

Hotellings T2 = 1.65 F-Ratio = 3.17 D.F. = 12 p = .008

Table 2
Proportion of inmates responding to BPI critical items

CRITICAL ITEM	Suicidal n=19	Non-suicidal n=17
HYPOCHONDRIASIS		
85. Whenever I am worried about something I get cramps.	.21	.06
DEPRESSION		
170. I feel depressed most of the time.	.47	.12
PERSECUTORY IDEAS		
66. I feel that I am in great danger from those who wish to harm me.	.26	.29
ANXIETY		
7. I feel frightened when I have to go out alone.	.10	.06
THINKING DISORDER		
68. I sometimes hear voices which no one else understands.	.16	.12
212. I cannot separate my daydreams from the real world.	.32	.12
SELF DEPRECIATION		
107. People are better off without me.	.26	.06
DEVIATION		
12. I frequently think of the same silly thing over and over for hours.	.53	.53
24. There have been days when I have done things without being able to recall anything at all about them.	.79	.41
36. I sometimes have fits and seizures that I cannot control.	.26	.06
48. I don't think life is worth living.	.26	.18
60. I have nightmares almost every night.	.10	.06
72. I have strange fears of places and things.	.32	.12

84.	I have periods when my mind races ahead so fast that I cannot think clearly.	.47	.29
96.	I have no interest at all in the opposite sex.	.16	.06
108.	I frequently experience terrible headaches.	.47	.29
120.	If things don't improve for me I may have to do something violent or dangerous.	.32	.06
132.	There have been periods of time when I have used alcohol to excess.	.95	.88
144.	I have often used dangerous drugs and chemicals.	.58	.47
156.	I would enjoy watching someone suffer great pain.	.16	.12
168.	I do not care what happens to me.	.26	.12
180.	I am very much attracted to members of my own sex.	.21	.18
192.	I have been in serious trouble with the law.	.95	.76
204.	I spend a great deal of time daydreaming about things that only I know.	.53	.29
216.	I have been planning to do away with myself.	.37	.12
228.	I do not care for anyone very much.	.32	.24
240.	I always have difficulty sleeping.	.53	.18

Table 3

Correlations between BPI subscale scores and Hoplessness Scale scores for suicidal and non-suicidal inmate groups, and the significance of the differences between correlations

BPI Scale	Suicidal		Non-Suicidal		Probability of Difference
	r	p	r	p	
Hypochondriasis	.58	.00	.36	.08	.22
Depression	.84	.00	.28	.14	.00
Denial	-.03	.45	.25	.16	.22
Interpersonal Problems	.57	.01	-.10	.35	.02
Alienation	.28	.12	.18	.24	.39
Persecutory Ideas	.53	.01	.15	.28	.12
Anxiety	.54	.01	.25	.17	.16
Thinking Disorder	.42	.04	.27	.15	.32
Impulse Expression	.48	.02	-.01	.48	.07
Social I ntroversion	.45	.03	.28	.14	.30
Self Depreciation	.69	.00	.42	.05	.14
Deviation	.79	.00	.45	.03	.05

Suicidal n =19 Non-Suicidal n =17

Table 4
Demographic variables of age, place of residence and ethnicity for suicidal and non-suicidal inmates

	Mean(SD)/Proportion	
	Suicidal	Non-suicidal
What is your age (in years)?	28.21 (7.34)	25.76 (10.4)
Where have you lived most of your life?		
Reservation	.05	.06
Rural/farm	.05	.18
Town/city	.89	.76
Ethnicity		
Caucasian	.68	.65
Metis	.16	.18
Registered Indian	.16	.18

Table 5
Comparison of suicidal and non-suicidal inmates on variables reflecting a history of family instability

	Mean(SD)/Proportion	
	Suicidal	Non-Suicidal
Since birth, how many times have you moved?	2.24 (1.20)	3.29 (1.45)
When you were growing up, who did you live with most of the time?		
Natural parent(s)	.84	.82
Adoptive parent(s)	.10	.06
Relative(s) who acted as parent(s)	-	-
Foster parent(s)	.05	.12
In an institution/group home	-	-
Were you raised in a family where you had a father or man that acted as a father?		
Yes	1.00	.82
Were you raised in a home where there was a mother or woman that acted as a mother?		
Yes	.95	.88
What was your father's usual occupation?		
Unskilled	.47	.28
Semiskilled	.06	.28
Trade/business	.47	.43
Professional	-	-
What was your mother's usual occupation?		
Housewife	.61	.67
Unskilled	.22	.20
Semi-skilled	.06	.07
Business/Skilled	-	.07
Professional	.11	-
Did your father finish high school?		
No	.53	.93
Did your mother finish high school?		
No	.50	.80

Has your father ever been convicted of a criminal offence?		
Yes	.28	.47
Has your mother ever been convicted of a criminal offence?		
Yes	.06	.06
Have any of your brothers/sisters ever been convicted of a criminal offence?		
Yes	.50	.53
Has your father ever seen a psychiatrist, psychologist, or other professional for an emotional or psychological problem?		
Yes	.24	.28
Has your mother ever seen a psychiatrist, psychologist, or other professional for an emotional or psychological problem?		
Yes	.24	.13
Have any of your brothers/sisters ever seen a psychiatrist, psychologist, or other professional for an emotional or psychological problem?		
Yes	.38	.25
Has your father had problems with drinking alcohol?		
Yes	.42	.50
Has your mother had problems with drinking alcohol?		
Yes	.47	.35
Have any of your brothers/sisters had problems with drinking alcohol?		
Yes	.47	.41
Has your father had problems with drugs?		
Yes	.06	.20
Has your mother had problems with drugs?		
Yes	.21	.06

Have any of your brothers/sisters had problems with drugs? Yes	.42	.20
Has your father ever tried to kill himself (commit suicide)? Yes	.12	.14
Has your mother ever tried to kill herself (commit suicide)? Yes	.29	.07
Have any of your brothers/ sisters tried to kill themselves (commit suicide)? Yes	.33	.07
Is your father still alive? No	.21	.33
Is your mother still alive? No	.16	.38
How old were you when your father died?	23.50 (3.70)	20.80 (15.91)
How old were you when your mother died?	25.00 (9.42)	19.00 (12.98)
How many of your brothers/ sisters have died?	.58 (1.07)	.29 (.77)

Table 6
History of physical abuse, either experienced or observed for suicidal and non-suicidal inmates

	Proportion	
	Suicidal	Non-suicidal
Have you ever been beaten or severely physically abused?		
Yes	.50	.35
When you were beaten or severely physically punished, was it severe enough to result in cuts or bruises to you?		
Yes	.86	1.00
Have others in your family or living unit been beaten or severely physically abused		
Yes	.39	.38
Have others in your family or living unit received cuts or bruises from being beaten or severely physically abused?		
Yes	.86	.83

Table 7
Social maladjustment of suicidal and non-suicidal inmates as reflected in earliest age of acting out behaviors

	Mean Age (SD)	
	Suicidal	Non-suicidal
How old were you (in years) when you were first arrested?	15.44 (2.12)	15.76 (4.87)
How old were you (in years) when you were first convicted?	15.83 (1.95)	17.12 (3.77)
Not counting small tastes, how old were you (in years) when you first started drinking alcoholic beverages?	14.47 (2.76)	14.06 (3.07)
How old were you (in years) when you first used a drug or substance to get high?	16.35 (4.40)	13.08 (2.46)

Table 8
Variables relating to school experiences of suicidal and non-suicidal inmates

	Mean(SD)/Proportion	
	Suicidal	Non-suicidal
Did you like school? No	.58	.53
What were your grades like in school?		
Above average	.05	.18
About average	.68	.76
Below average	.26	.06
Did you ever take specialized or remedial classes for help with problems you were having in school?		
Yes.	.26	.12
Have you failed any grades?		
Yes	.63	.59
Have you accelerated any grades?		
Yes	.32	.06
How many times were you suspended/kicked out from school?		
Never	.21	.41
Once	.32	.06
A few times	.37	.41
Many times	.10	.12
What is the highest grade you nave completed in school?	9.16 (1.54)	9.65 (1.17)
Which grades were failed? (Total number noted.)	1.00 (.94)	.88 (1.05)
Which grades were skipped (accelerated)? (Total number noted.)	.58 (1.02)	.12 (.48)

Table 9
Extent of alcohol and drug use by suicidal and non-suicidal inmates

	Mean (SD)/Proportion	
	Suicidal	Non-suicidal
Level of drinking (1)	15.00 (4.48)	12.82 (3.78)
During the days when you drank alcoholic beverages, about how many beers or drinks did you have during one day?	18.62 (13.35)	19.27 (14.34)
What was the largest number of beers or drinks you have had in one day?	31.29 (17.33)	32.31 (19.43)
How many days per week did you usually drink?	5.00 (1.88)	3.69 (2.50)
Level of drug use (2)	20.53 (9.15)	19.21 (8.79)
Number of different types of drugs used	7.41 (2.69)	6.07 (2.64)
How much do you drink?		
Less than friends	.26	.24
Same as friends	.16	.35
More than friends	.58	.41
Have you ever used a needle or syringe to inject a drug into your veins or under your skin? Yes	.70	.57

	95% Confidence Interval	
	Suicidal	Non-suicidal
Have you ever attempted suicide after drinking alcohol? Yes	.3574-.8270	NA (4)
Have you ever attempted suicide after taking drugs? Yes	.1421-.6167	NA

(1) Maximum score 20. Calculated by scoring 1 point for each "yes" response on questions 1, 4, 8-20, 23, 24 and each "no" response on questions 21, 22 and 25 of Section VIII (SOC Version One).
(2) Maximum score 47. 1 point if "yes" response on questions 1, 2, 29, 42, 43, 44 and 45. 1 point for each "a few times" response and 2 points for each "many times" response on even numbered questions from 4 to 28, and odd numbered questions from 31 to 41.
(3) Number of different substances used. Maximum 12.
(4) Not applicable.

Table 10
Evidence of emotional or psychiatric problems with suicidal as compared to non-suicidal inmates

	Mean(SD)/Proportion	
	Suicidal	Non-suicidal
Have you ever seen a psychiatrist, psychologist, or other professional for an emotional or psychological problem?		
Yes	.78	.41
How old were you (in years) when you last saw someone for an emotional or psychological problem?	27.33(6.60)	17.14 (4.30)

Table 11
Extent of criminal history for suicidal and non-suicidal inmates

	Mean(SD) Suicidal	Non-suicidal
How many times have you been arrested?	18.11 (12.68)	12.57 (7.38)
How many times have you been convicted?	17.11 (17.62)	8.94 (5.88)
Number of years from first to last arrest	12.11 (7.92)	9.53 (8.00)
Number of years from first to last conviction	11.72 (7.58)	8.35 (8.62)

Table 12
Variables reflecting affective considerations of suicidal and non-suicidal inmates

	Proportion	
	Suicidal	Non-suicidal
While in detention, how often were you visited by relatives?		
Never	.40	.25
Once	.07	-
A few times	.27	.50
Many times	.27	.25
While in detention, how often were you visited by friends?		
Never	.21	.38
Once	.07	.08
A few times	.50	.46
Many times	.21	.08

	95% Confidence Interval	
	Suicidal	Non-suicidal
Can you think of anything that would keep you from killing yourself (such as your family, friends, you might seriously hurt yourself if you fail, or something else)? No	.0527-.8534	NA
Can you think of any reasons you should stay alive instead of trying to die? No	.2836-.9949	NA